

means for retrieving source related information, wherein the source related information includes descriptive fields corresponding to the source material;

means for retrieving a set of heuristic rules associated with the source related information;

means for processing the subscriber selection data with respect to the descriptive fields and the heuristic rules to generate the subscriber profile vector; and

means for storing the subscriber profile vector.

### Remarks

#### *Status*

The Examiner rejected claims 20-51 (all of the pending claims). It is submitted that the claims are patentable over the cited references for at least the reasons discussed below.

#### *Discussion*

The Examiner objected to claims 39-47 as having a typographical error in line 10 of claim 39. The applicant has amended claim 39 to correct the typographical error contained therein. As such, the objection should be withdrawn.

The Examiner rejected claims 20, 26, 28-31, 39, 43 and 45-51 under 35 U.S.C. §102(e) as being anticipated by *Williams et al. (U.S.P. 5,977,964)*. The Examiner rejected claims 21-25, 27, 32-38, 40-42 and 44 under 35 U.S.C. §103(a) as being unpatentable over *Williams et al.* The rejections are respectfully traversed.

Independent claim 20 is directed to a method for generating a subscriber profile vector for a subscriber in a client-server based architecture. The method includes monitoring subscriber viewing activities including requests for source material, retrieving source related information corresponding to the requested source material, *retrieving heuristic rules associated with the source related information, and processing the subscriber selection data with respect to the source related information and the heuristic rules to generate the subscriber profile vector.*

AF Amendment

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As is clearly defined in the specification at page 11, lines 26-29 and illustrated in Fig. 1, the system of the current invention utilizes heuristic rules (160) to generate a subscriber profile vector. The heuristic rules may be logical rules or may be rules expressed in terms of conditional probabilities. Fig 10A and the associated text from page 21, line 26 – page 22, line 15 illustrate and describe exemplary logical heuristic rules. For example, the heuristic rules equate an individual watching the soap opera “Days of our lives” with a housewife (1050). The heuristic rules also equate higher frequency of channel changes to higher income, as illustrated a user who zaps once every 2 minutes and 42 seconds is associated with an income of greater than \$75,000 (1010).

Fig. 10B and the associated text from page 22, line 16 – page 22, line 24 illustrate and describe exemplary probabilistic heuristic rules. The exemplary heuristic rules define probabilities of demographic make-up of a user based on the category of programming they are viewing. For example, the heuristic rules assign an individual watching the news a 40% probability of being over the age of 70, a 40% probability of making between \$50K - \$100K, a 50% of being a single member family, and a 70% chance of being female.

The applicant submits that *Williams et al.* do not disclose or suggest the retrieval or use of any rules, let alone heuristic rules, or the generation of a subscriber profile based on the heuristic rules, as required by claim 20. To the contrary, *Williams et al.* disclose a method for configuring a system based on users preferences. The *Williams et al.* system “determines which user of a plurality of *known system users* is currently using system 100 (emphasis added)” (see col. 5, lines 37-38) and then “configures system configuration settings of system 100 in accordance with the user *preference information* (emphasis added)” (see col. 5, lines 42-46).

Fig. 8 illustrates a user profile database 800, which one can readily see by viewing the figure is a database for simply storing *preference* data for each user for each piece of equipment. For example, the illustrated profile database 800 tracks preferences for the TV including favorite channels, and for each channel the preferred volume, genre of program, and any blocking or support programming. In addition, throughout the specification it is clearly pointed out that the user profile database simply includes user preferences. For example, “configuring the system in accordance with user preference information” (see col. 5, lines 23-25); and “user profile database 800 contains information (user preference information) associated with each of the different

media ... user preference information related to a television/monitor, a personal computer and audio components ... user preferred channels, volume, program genre information, whether to block content information, and whether supplemental programming is requested ... Joe User's favorite television channel is channel 2, which he enjoys viewing at a moderate volume ..." (see col. 5, line 52 – col. 6, line 18).

The *Williams et al.* system discloses at col. 9, lines 18-58, determining what known user is using the system by "monitoring user interaction with system 100 and checking current system settings ... [, storing the] monitored user information ... in a behavior log ... [and comparing] the information contained in the behavior log as well as the current system settings with user preference information ... available on the *known* system users ... in a user profile database". "In one embodiment, system controller 104 calculates a user metric for the information in the behavior log and the current system settings as well as for of the known system users. If there is greater than a predetermined probability that that the information in behavior log matches the user profile of one of the known users, system controller 104 determines that a match has been made and, in step 308, configures system 100 in accordance with the user preference information on the user profile database 800".

The applicant submits that there is clearly no disclosure or suggestion in *Williams et al.* of retrieving any type of rules, let alone retrieving heuristic rules associated with source related information, or generating a subscriber profile vector based on the source related information and the heuristic rules, as required by claim 20. In fact, there would be no motivation to retrieve and apply a set of heuristic rules in order to generate a profile of the user for at least the following reasons: (1) the *Williams et al.* system already creates a user profile (in the form of user preferences); and (2) the users of the *Williams et al.* system are known users (see col. 5, lines 37-38; col. 9, lines 41-43) and as such have defined characteristics so there is no need to attempt to determine these characteristics by applying rules.

On page 2 of the Final Office Action, the Examiner states that "Williams clearly teaches the concept of rules for generating user profiles when Williams shows that user profile database 800 tracks users preferred channels, volume, program genre information, whether to block content information and whether supplemental programming is requested with a particular channel (see Figure 8, column 5, lines 52-64)". The applicant acknowledges (as discussed

above) that the user profile database 800 of *Williams et al.* captures the data mentioned above by the Examiner. However, applicant submits that the data is nothing more than a compilation of preferences, and that there is clearly no disclosure or suggestion of retrieving and applying any rules, let alone heuristic rules, to generate the data (i.e., user preferences) captured in the user profile database 800 of *Williams et al.* Moreover, the Examiner simply states that *Williams et al.* teach applying rules without identifying where the disclosure or suggestion of these rules comes from. Furthermore, even assuming arguendo that the Examiner could somehow construe the existence of rules (i.e., heuristic rules), the Examiner has provided no motivation for using the rules, any explanation of how these rules would be used or be of any benefit, or what the result would be of using these rules. The applicant submits that there is no use for, or motivation for using, rules as suggested by the Examiner since the user profile (i.e., user preferences) of *Williams et al.* is already defined without the application of any rules.

The Examiner further asserts on page 2 that "[t]he claimed rules merely read on the fact that the system of Williams identifies the genre watched". On page 5, the Examiner asserts that "[t]he claimed 'retrieving heuristic rules associated with the source related information' is met when Williams shows that the system correlates program watched to genre and build a profile for the viewer (see column 5, line 52-64)". The applicant respectfully submits that the Examiner's assertions are erroneous. The applicant submits that *Williams et al.*, in particular the above noted sections, simply disclose that genre is one of the preferences that is stored in the user profile database 800 and that the genre may have to be retrieved from program database 900 (see col. 9, lines 5-10). There is clearly no disclosure or suggestion of applying rules in order to capture the genre and even assuming arguendo there was rules associated therewith, these rules would certainly not be heuristic rules and would certainly not pertain to generating a subscriber profile as required by claim 20, but would instead apply to classifying a program.

On page 2 of the Office Action, the Examiner states "[i]f the viewer is detected as viewing most of the time cartoons, evidently the system would create a profile of a child so the next time that viewer is watching, advertisements such as cereal and toys are presented (see column 6, lines 40-49)". On page 3, the Examiner states that "[b]efore a user can be recognized by the system of Williams, clearly profiles using rules had to be applied in order to correlate programs to viewers for example viewers watching news are likely to be adults, viewers

watching cartoons are likely to be children. Since in the system of Williams, advertising is presented to targeted viewers, clearly rules had to be used to identify viewers and create profiles. Furthermore, since the system of Williams updates profiles and identifies new users, clearly rules are being applied in order to recognize new viewing patterns (see Figure 2, column 8, lines 14-24, column 9, lines 11-16)". On page 5, the Examiner asserts that said processing in claim 20 is met "when the system generates and stores viewers' profiles identifying adults and children (see Figures 7, 8)".

The applicant submits that the Examiner has construed the use of rules in the *Williams et al.* system to develop profiles and identify users (i.e., correlating programs to users such as watching cartoons suggests the user is a child, watching the news suggests the user is an adult), and that there is clearly no disclosure or suggestion of such rules in *Williams et al.* To the contrary, as discussed above, the user profile database 800 stores preference information for each known user for each component of the entertainment system. The *Williams et al.* system determines which user is using a particular component of the system by comparing the current settings versus the preferences of each known user stored in the user profile database 800. If the user is identified as a child (i.e., meaning that the preferences match a known child user not based on what is being watched determining the user is a child as suggested by the Examiner) the system may restrict advertisements to cereal. The system continues to monitor the activity of users and compare to the user profile database 800 in order to detect when a different known user starts using the system. The passages cited by the Examiner clearly support the arguments of the applicant.

For at least the reasons advanced above, it is clear that *Williams et al.* do not disclose or suggest retrieving heuristic rules or generating a profile based on the heuristic rules, as required by claim 20. Accordingly, claim 20 is submitted to be patentable over *Williams et al.* Moreover, claims 21-30 depend from claim 20 and are therefore submitted to be patentable over *Williams et al.* for at least the reasons addressed above with respect to the patentability of claim 20, and for the further features recited therein.

For example claim 23 recites that the heuristic rules define probabilistic measures of demographics associated with the subscribers and that the subscriber profile includes household demographic data indicating probabilistic measures of household demographics. The applicant

submits that there is clearly no disclosure or suggestion in *Williams et al.* of retrieving rules, let alone heuristic rules defining probabilistic measures of demographics associated with the subscribers, or the subscriber profile including household demographic data indicating probabilistic measures of household demographics, as required by claim 23.

On page 3 of the Action, the Examiner asserts that "[a]lthough Williams does not explicitly mention retrieving heuristic rules as claimed, it would have been obvious to one of ordinary skill in the art to do so in order to correlate viewers to programs watched and create appropriate profiles for example adults or children". Initially, the applicant points out that the Examiner has not provided any reference disclosing or suggesting heuristic rules as claimed, and as such these rules can not be considered obvious. Furthermore, as *Williams et al.* provides no motivation and in fact teaches away from the application of heuristic rules to determine the probabilistic demographic makeup of a subscriber as claimed (i.e., the *Williams et al.* profile consists of preference data, and the users are known), the Examiner is clearly reconstructing the prior art with the hindsight of the current invention which clearly violates the intent of 35 USC 103.

Moreover, there is clearly no disclosure/suggestion of creating of adult/children profiles for users based on programs viewed as suggested by the Examiner. As discussed above, the *Williams et al.* system collects preferences for each known user and determines what user is using the system by comparing current settings/selections with user preferences stored in the user profile database 800. The programs watched are correlated to viewers only by the fact that once the user is determined the channel watched is recorded in the user profile database 800. The applicant submits that claim 23 is further patentable over the cited references for at least the additional reasons discussed above.

Claims 24 and 25 recite that the heuristic rules define probabilistic measures of program and product respectively. As discussed above with respect to claim 23, *Williams et al.* do not disclose or suggest heuristic rules, let alone heuristic rules that define probabilistic measures. For at least these additional reasons, claims 24 and 25 are submitted to be patentable over the cited references.

For at least the above noted reasons, the applicant submits that claims 20-30 are patentable over the cited references whether taken alone or in any reasonable combination. Accordingly, the rejections of claims 20-30 should be withdrawn.

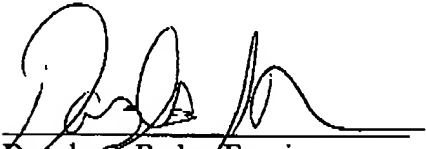
Independent claims 31, 36, 39 and 48 recite features that are similar to those recited in claim 20. As such it is submitted that claims 31, 36, 39 and 48 are patentable over Williams et al. for at least similar reasons to those described with respect to claim 20. Moreover, claims 32-35, 37-38, 40-47 and 49-51 that depend from claims 31, 36, 39 and 48 respectfully, are submitted to be patentable for at least the reasons described with respect the independent claims and for the further features recited therein. As such, the rejection of claims 31-51 accordingly should be withdrawn.

#### Conclusion

For the foregoing reasons, Applicant respectfully submits that claims 20-51 are in condition for allowance. Accordingly, early allowance of claims 20-51 is earnestly solicited.

If the Examiner believes that a conference would be of value in expediting the prosecution of this Application, the Examiner is hereby invited to contact the undersigned attorney to set up such a conference.

Respectfully submitted,

  
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39. (Twice Amended) A data processing system for generating a subscriber profile vector in a client-server based architecture, the data processing system comprising:

means for selecting source material for a subscriber to  
5 view;

means for monitoring subscriber activity including

means for receiving the subscriber selections for source  
material, and

means for recording the subscriber selections for source  
10 material, wherein a record of the selections constitutes  
subscriber selection data;

means for retrieving source related information, wherein  
the source related information includes descriptive fields  
corresponding to the source material;

15 means for retrieving a set of heuristic rules associated  
with the source related information;

means for processing the subscriber selection data with  
respect to the descriptive fields and the heuristic rules to  
generate the subscriber profile vector; and

20 means for storing the subscriber profile vector.